

**REMARKS**

By this response, claims 5 and 12-20 have been canceled without prejudice to or disclaimer of the subject matter contained therein; claims 1 and 6-11 have been amended; and new claims 21-26 have been added, leaving claims 1-4, 6-11 and 21-26 pending in the application. Applicants submit that the claim amendments do not narrow the scope of at least claims 6-8 and 10. Reconsideration and allowance are respectfully requested in view of the following remarks.

**Status of Office Action**

Examiner Keehan confirmed on August 24, 2005, that the Office Action is non-final.

**Allowable Subject Matter**

Applicants gratefully acknowledge the indication at pages 7-8 of the Office Action that Claims 6-8, 10, 16-18 and 20 contain allowable subject matter. Claims 6-8 and 10 have each been rewritten in independent form to respectively recite the combined features of claims 1, 5 and 6; 1, 5 and 7; 1, 5 and 8; and 1, 5 and 10 (i.e., the features of these respective claims prior to this reply), and thus are allowable. For reasons stated below, however, it is respectfully submitted that all pending claims are patentable.

**First Rejection Under 35 U.S.C. § 102**

Claims 1-5, 11, 14, 15 and 19 stand rejected under 35 U.S.C. §102(e) over U.S. Patent No. 6,333,462 to Quaggia ("Quaggia") for the reasons stated at pages 2-

3 of the Office Action. Claims 5, 14, 15 and 19 have been canceled. The rejection is respectfully traversed.

Claim 1, as amended, recites "solid insulator within a gas-insulated encapsulated high voltage installation, the solid insulator with a disc-shaped insulator body supporting at least one conductor that is provided for carrying high voltage, and that is arranged within an outer enclosure of the gas-insulated encapsulated high voltage installation, wherein said insulator body comprises a fiber-reinforced polymer, the orientation of the fibers of the insulator body is in the disc-plane and the orientation varies from layer to layer or within a layer, such that the disc-plane has quasi-isotropic mechanical properties" (emphasis added). Support for the recitation of "a disc-shaped insulator body" is provided in canceled claim 14. Support for the recitation of "the orientation of the fibers of the insulator body is in the disc-plane and the orientation varies from layer to layer or within a layer" is provided, for example, at paragraph [0028] of the specification. Support for the recitation of "such that the disc-plane has quasi-isotropic mechanical properties" is provided, for example, in canceled claim 5.

Claim 1 recites a solid insulator within a gas-insulated encapsulated high voltage installation. The insulator body is disc-shaped and supports a high voltage conductor. The fibers are oriented in the disc-plane and the orientation of the fibers varies from layer to layer or within a layer. The fiber orientation achieves isotropic mechanical properties in the disc-plane of the insulator body.

Applicants respectfully submit that Quaggia fails to disclose or suggest the solid insulator recited in claim 1. Quaggia discloses a termination for an electric cable comprising an insulating body 11 surrounding a conductive element 8 (col. 1,

ll. 16-23; col. 7, ll. 19-23; Fig. 1). The insulating body can be formed as a unitary piece, preferably made from epoxy resin reinforced with fibers or similar fillers (col. 7, ll. 61-65). The insulating body 11 is made by a molding process including pouring or extruding of the insulating material around the conductive element 8, or making a winding with insulating fibers soaked with resin to jacket the conductor (col. 13, ll. 12-20).

Quaggia does not disclose a solid insulator within a gas-insulated high voltage installation. In contrast, Quaggia discloses that the cable termination is designed for other use (col. 1, ll. 18-20).

Quaggia discloses that the portion of the insulating body 11 disposed above the flange 10 is cylindrical (column 9, ll. 63-67). As shown in FIGS. 1 and 2, the insulating body 11 has an elongated cylindrical shape. Quaggia does not disclose or suggest that the insulating body 11 is disc-shaped, as recited in claim 1.

Quaggia also does not disclose or suggest that the fibers of the insulator body are oriented in a disc-plane. Quaggia discloses that the fiber materials with resin are molded around the conductor (col. 13, ll. 12-15). Applicants submit that Quaggia's resulting structure would have an axial orientation of the fibers. Quaggia also discloses that the fibers can be soaked with resin and wound around the conductor (col. 13, ll. 16-20). Applicants submit that this alternative technique would result in a tangential orientation of the fibers. Accordingly, neither technique disclosed by Quaggia would result in the fibers being oriented in a disc-plane, as claimed. Also, Quaggia does not disclose or suggest an orientation of in-plane fibers that varies from layer to layer, as claimed.

For at least the foregoing reasons, Applicants respectfully submit that Quaggia fails to anticipate or render obvious the solid insulator recited in claim 1. Thus, claim 1 is patentable over Quaggia. Dependent claims 2-4 and 11 are also patentable over Quaggia for at least the same reasons as those discussed with respect to claim 1. Therefore, withdrawal of the rejection is respectfully requested.

### **Second Rejection Under 35 U.S.C. § 102**

Claims 1-3, 5 and 11 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 3,988,645 to Luxa et al. ("Luxa") for the reasons stated at pages 3-4 of the Office Action. Claim 5 has been canceled. The rejection is respectfully traversed.

Luxa discloses an insulating material for electrical apparatus. Luxa discloses that the insulating material is used in an overvoltage arrester for a metal-encapsulated high-voltage installation (col. 3, ll. 55-59). As shown in FIG. 1 of Luxa, the insulating material 1 contains an upper cover layer 2, a lower cover layer 3 and a fluid-permeable laminate 4 between the cover layers 2, 3 (col. 1, ll. 21-29). The cover layers 2, 3 can consist of laminated paper or fabric, or fiberglass fabric bonded with epoxy resin. However, the intermediate laminate 4 consists of electrical insulating foils, which are stacked with parallel corrugations and joined together at least at some points to achieve preferred directions for the fluid-permeability (col. 2, ll. 37-48; col. 1, ll. 33-37; FIG.1).

Applicants submit that Luxa does not disclose or suggest a disc-shaped insulator supporting a conductor. In FIG. 4, Luxa shows an overvoltage arrester 35 for a metal-encapsulated high-voltage installation 36 including gas-permeable insulating material 46. However, Luxa's insulating material 46 is formed as a hollow

cylindrical body containing a resistor 51 and two arc quenching gaps 50. Clearly, the insulating material 46 is not a disc-shaped insulator body, as recited in claim 1.

Furthermore, Luxa does not disclose or suggest a solid insulator with a disc-shaped insulator body, in which “the orientation of the fibers of the insulator body is in the disc-plane and the orientation varies from layer to layer or within a layer, such that the disc-plane has quasi-isotropic mechanical properties.” Referring to FIGS. 3 and 4 of Luxa, Applicants submit that the two cover layers 25 and 26, which are made from fiber, and the laminate 27 are extended in an axial direction, i.e., parallel to arrow 7 (Fig. 4), which is perpendicular to the radial direction indicated by arrow 5 (FIGS. 1, 4), which radial direction corresponds to the disc-plane fiber orientation of claim 1.

In addition, Luxa does not disclose or suggest a layer-to-layer variation of fiber orientation in a disc plane.

For at least the foregoing reasons, Applicants respectfully submit that Luxa does not anticipate or render obvious the solid insulator recited in claim 1. Thus, claim 1 is patentable over Luxa. Dependent claims 2, 3 and 11 are also patentable over Luxa for at least the same reasons as those discussed with respect to claim 1. Therefore, withdrawal of the rejection is respectfully requested.

#### **First Rejection Under 35 U.S.C. § 103**

Claim 9 stands rejected under 35 U.S.C. § 103(a) over Quaggia. The reasons for the rejection are stated on pages 4-5 of the Office Action. The rejection is respectfully traversed.

Claim 9 depends from claim 1. Applicants submit that Quaggia also fails to suggest the subject matter recited in claim 9 for at least the same reasons as those discussed above with respect to claim 1. Therefore, withdrawal of the rejection of claim 9 is respectfully requested.

### **Second Rejection Under 35 U.S.C. § 103**

Claim 9 stands rejected under 35 U.S.C. § 103(a) over Luxa. The reasons for the rejection are stated on page 5 of the Office Action. The rejection is respectfully traversed.

Applicants submit that Luxa also fails to suggest the subject matter recited in claim 9 for at least the same reasons as those discussed above with respect to claim 1. Therefore, withdrawal of the rejection of claim 9 is respectfully requested.

### **Third Rejection Under 35 U.S.C. § 103**

Claims 1-3, 5, 9, 14, 15 and 19 stand rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,753,864 to Schulz et al. ("Schulz") in view of Quaggia. The reasons for the rejection are stated on pages 5-7 of the Office Action. Claims 5, 14, 15 and 19 have been canceled. The rejection is respectfully traversed.

Schulz discloses a supporting insulator used in gas-insulated switching installations. The insulator 1 is made of a cured casting resin (col.1, ll. 45-49). The insulator body 1 is arranged within an outer enclosure of the gas-insulated switching installation and loaded by reaction forces resulting from a pressure difference between two pressure spaces of the switching installation (col. 3, ll. 60-67). Resin is used as an insulator material (col. 1, ll. 44-45). However, Schulz does not disclose

that the insulator body 1 comprises a fiber reinforced polymer. As such, Schultz discloses no orientation of fibers in the insulator body 1.

Applicants submit that Quaggia fails to provide the required suggestion or motivation to modify Schulz's insulator to result in the solid insulator recited in claim 1. As discussed above, Quaggia discloses using a fiber reinforced polymer wound or molded around a conductive element. As such, Quaggi would not have suggested modifying Schulz's insulator to result in the claimed solid insulator with a disc-shaped insulator body comprising a fiber-reinforced polymer, in which the orientation of the fibers of the insulator body is in the disc plane, and the fiber orientation varies from layer to layer, or within a layer, such that the disc-plane has quasi-mechanical properties.

Thus, Applicants submit that claim 1 is patentable over the applied references. Dependent claims 2, 3 and 9 are also patentable for at least the same reasons as those discussed with respect to claim 1. Therefore, withdrawal of the rejection is respectfully requested.

### **New Claims**

Support for dependent claims 21 and 22 is provided at paragraph [0034] of the specification, for example. Support for dependent claims 23-26 is provided in canceled claim 14, for example. Claims 21-26 are also patentable.

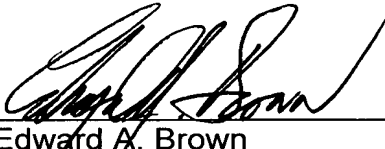
**Conclusion**

For the foregoing reasons, allowance of the application is respectfully requested. Should there be any questions concerning this reply, the Examiner is respectfully requested to contact the undersigned at the number given below.

Respectfully submitted,

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